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Figure 1

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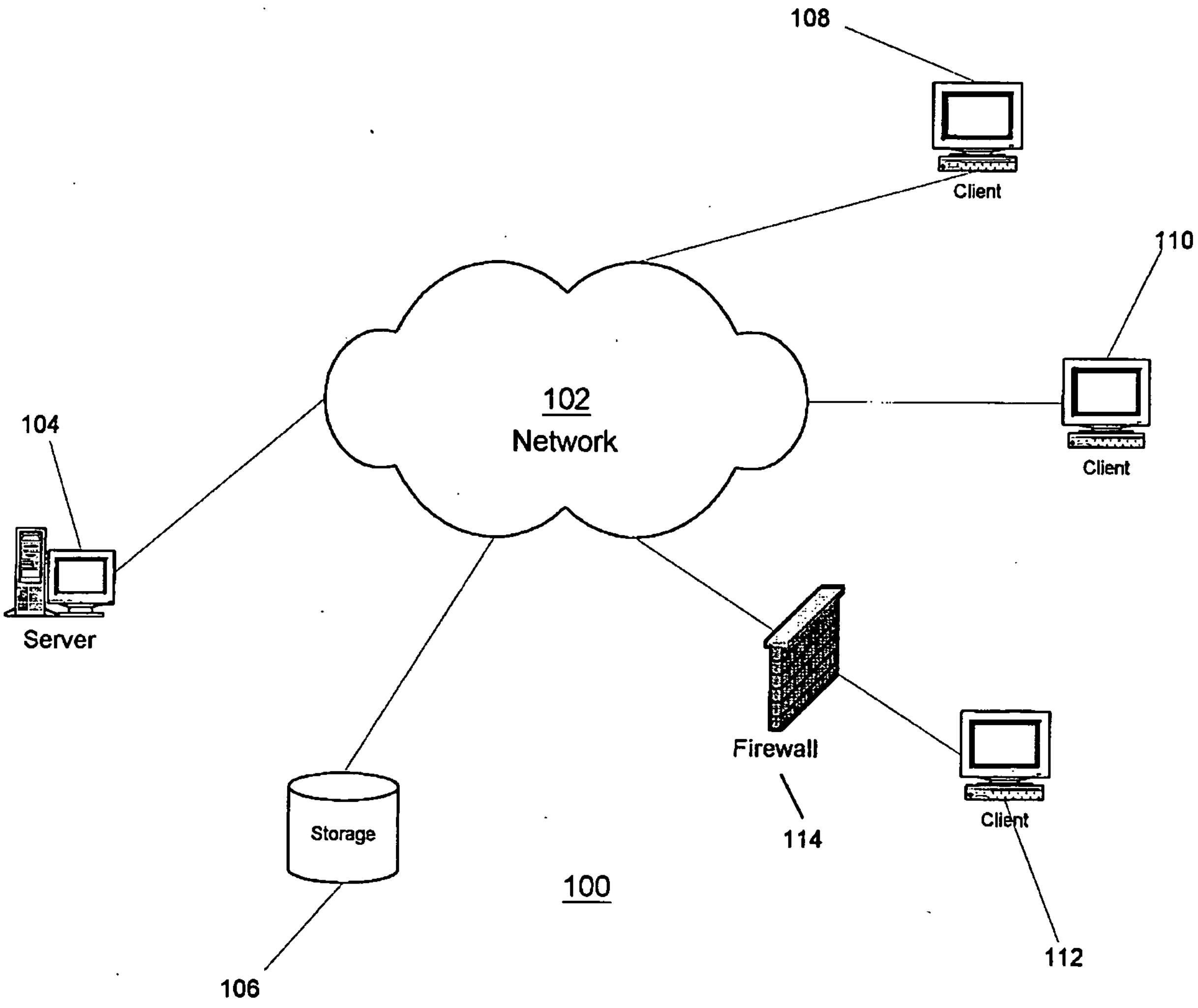


09692394 .101900

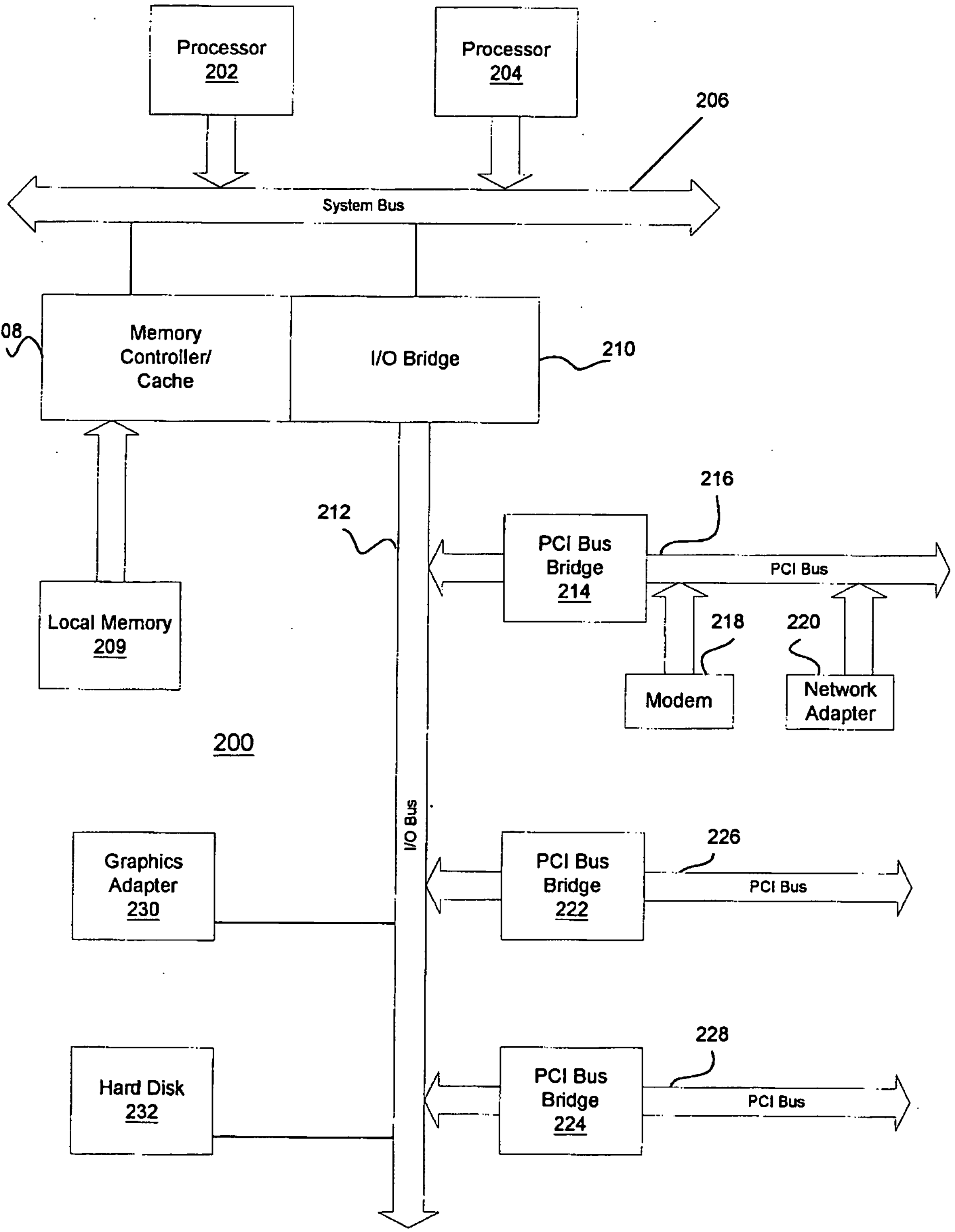
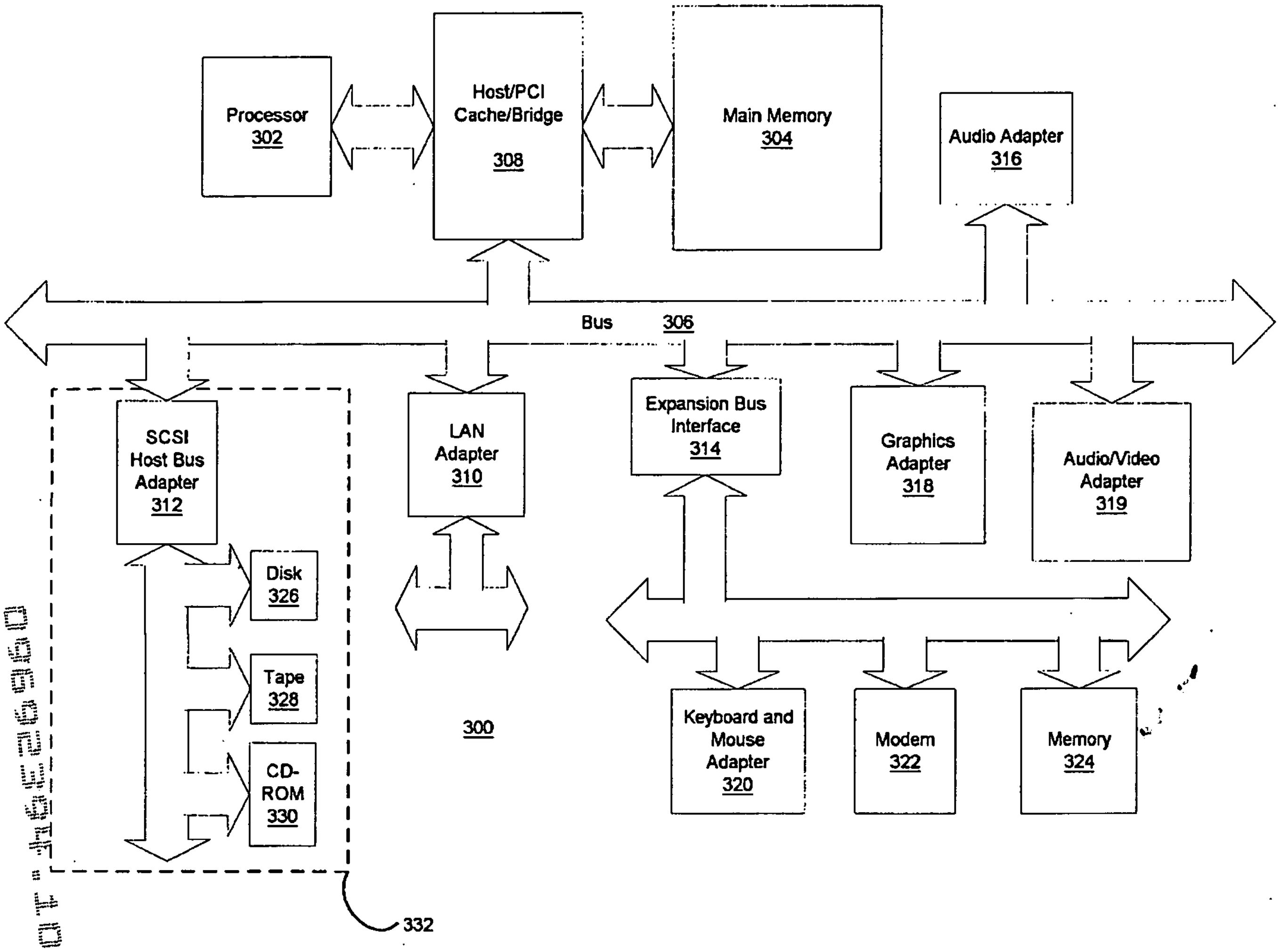


Figure 2

09652954 .101900

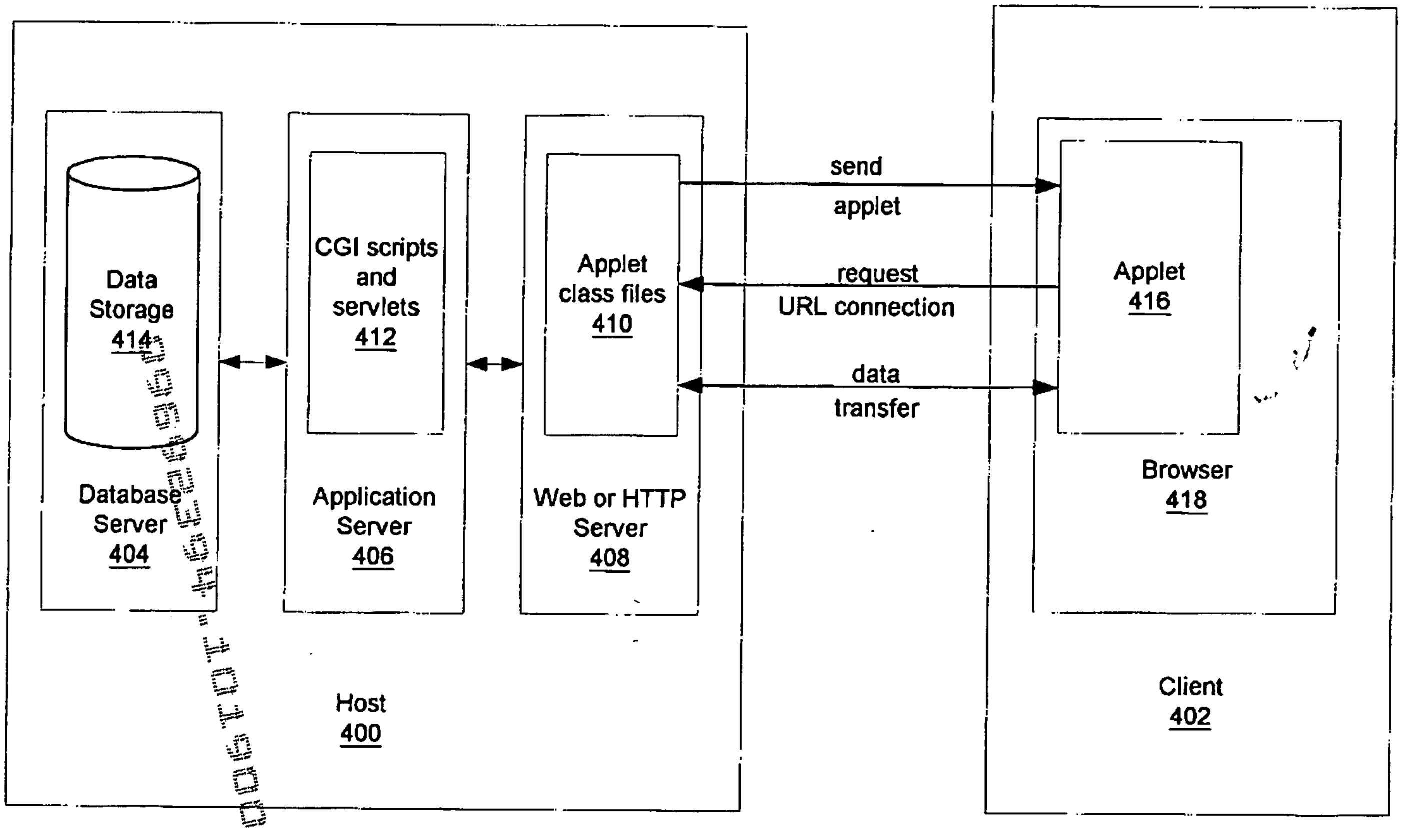


09652334 . 101500

Figure 3

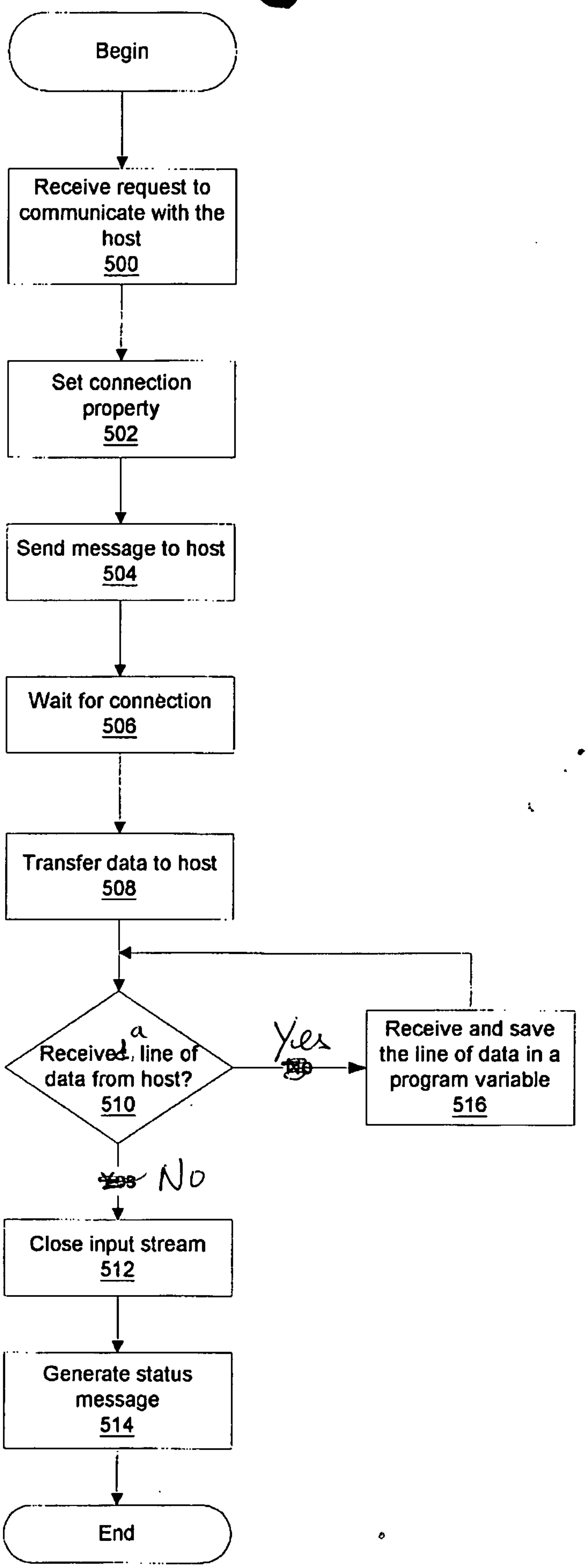
Figure 4

SCANNED, # 22



09598394.101500

Figure 5



09692394.101900

Figure 6

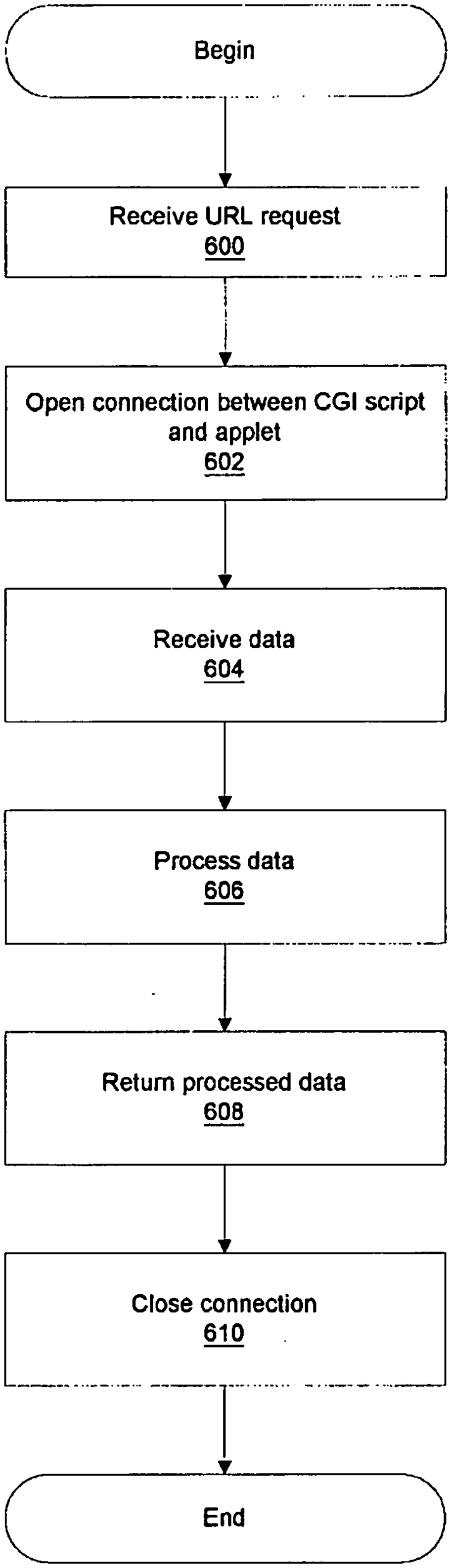

Begin
Receive URL request
600
Open connection between CGI script and applet
602
Receive data
604
Process data
606
Return processed data
608
Close connection
610
End

Figure 7A

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```
/*
 * This is a function that is executed by the applet. This Java code
 *     allows the applet to make a connection and then
 *     talk (exchange data) with the host that it was downloaded from.
 *
 * So, create a URL Connection to the server that you (applet) were
 *     launched from and then exchange data with the server.
 *
 * Inputs to this function are:
 * 1. aFileAtURL - This is the name of a servlet or CGI program at
 *                 the server.  The applet uses a servlet or CGI
 *                 helper program back at the host to handle Add,
 *                 Delete, Update and Retrieve of data from a
 *                 backend database.
 *
 * 2. dataString - This is the data stream that will be sent to the
 *                 host once a successful connection is created.
 *
 */
public void stdioTalkToHome(String aFileAtURL, String dataString )
{
    // The following 3 vars will be defined before the static {}
    //    block in the applet
    URL redirectURL = null;
    static final int DEFAULT_PORT = 80;
    String msgOutString     = "";

    URLConnection urlc = null;
    String host;
    int port;
    BufferedReader bri = null;
    DataOutputStream dos = null;

    // if a msg to the user is already showing, re-surface that msg
    if (getMsgHandle() != null)
    {
        getMsgHandle().changeText("Connecting to host... Please Wait.");
        getMsgHandle().showIt();
    }
    else
    {
        ivMsg = new PopUpMsg( "Applet Status",
                              "Connecting to host... Please Wait.");
    }
```

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```
    // find the host & port that I (applet) was launched from...
    host = getDocumentBase().getHost();
    port = getDocumentBase().getPort();

    consoleDebug("host = " + host);
    consoleDebug("port = " + port);

    // if port is not set...
    if (-1 == port)
    {
        // force it to default port...
```

704

```
// Create the fully qualified URL string...
try
{
   redirectURL = new URL( getDocumentBase().getProtocol(),
                     host,
                     port,
                     aFileAtURL );
}
catch (MalformedURLException e)
{
   showHostCommError(1000; "Host URL could not be located for network communication.");
   showError(e);
   return;
}
consoleDebug("Home URL = " + redirectURL);
```

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Figure 7B

```
// Now, create the URLconnection to the host...
try
{
   urlc = redirectURL.openConnection();

   // next, change the setup parameters...
   urlc.setDoInput(true);
   urlc.setDoOutput(true);
   urlc.setUseCaches(false);
   urlc.setAllowUserInteraction(false);

   // and also the request property...
   urlc.setRequestProperty( "Content-Type", "application/x-www-form-urlencoded" );
}
catch (IOException e)
{
   showHostCommError(1001, "A URLConnection for host communication could not be created.");
   showError(e);
   return;
}
consoleDebug("Home URLConnection was created");


if (getMsgHandle() != null)
{
   getMsgHandle().changeText("Sending data to host... Please Wait.");
   getMsgHandle().showIt();
}
```

708

```
// Send the data from applet to the host server
try
{
   dos = new DataOutputStream(urlc.getOutputStream());
   dos.writeBytes(dataString);
   dos.close();
   consoleDebug("line written: " + dataString);
}
catch (IOException e)
{
   showHostCommError(1005, "User Data write failure occurred during host communication.");
   showError(e);
   return;
}
consoleDebug("All data was sent to host.");
```

710

```
// Create a Reader
if ( urlc != null )
{
  try
  {
    bri = new BufferedReader(new InputStreamReader(urlc.getInputStream()));
  }
  catch (UnknownServiceException e)
  {
    showHostCommError(1003, "A reading stream for host communication could not be created due to UnknownServiceException.")
    showError(e);
    return;
  }
  catch (IOException e)
  {
    showHostCommError(1003, "A reading stream for host communication could not be created due to IOException.");
    showError(e);
    return;
  }
}
consoleDebug("reader created");
```

Figure 7C

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```
if (getMsgHandle() != null)
{
  getMsgHandle().changeText("Receiving data from host... Please Wait.");
  getMsgHandle().showIt();
}

// Receive data from host server (using Reader).
String msgOutLineString;

if ( bri != null )
{
  try
  {
    while ( (msgOutLineString = bri.readLine()) != null )
    {
      consoleDebug("msgOutLineString :" + msgOutLineString);

      msgOutString += msgOutLineString + "\n";
    }
  }
  catch (IOException e)
  {
    showHostCommError(1007, "Failure receiving data from host." );
    showError(e);
    return;
  }
}

consoleDebug("msgOutString :" + msgOutString);

consoleDebug("Through reading data from server");


if (getMsgHandle() != null)
{
  getMsgHandle().changeText("Closing host connection... Please Wait.");
  getMsgHandle().showIt();
}
```

Figure 7D

```
    // Cleanup
    if ( bri != null )
    {
       try
       {
          bri.close();
       }
       catch (IOException e)
       {
          showHostCommError(1008, "Input stream close error during host communication." );
          showError(e);
          return;
       }
    }


    // Check for and show the user any host communication ERRORS...
    .
    .
    .


    // Bring down any communication STATUS msgbox that we were
    //    showing the user...
    .
    .
    .

 }   /* end of stdioTalkToHome */


 /**
  * This function shows debug info in Java Console of the
  *   browser only if TRACE flag has been turned on.
  *
  * Inputs to this function are:
  * 1. show - This is the string to display in the Java Console
  *
  */
 public static void consoleDebug(String show)
 {
    if (TRACE)
    {
       System.out.println("=> " + show);
    }
 } /* end of consoleDebug */
```

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